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Defense Acquisition University

Driving Readiness through Early Life Cycle Sustainment Planning

RAM and Supportability, the Key to Successful Life Cycle Management

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Life Cycle Management… Not a New Concept

"Incorporating logistics considerations into the design of weapon systems was, in fact, official policy dating back to 1964: the Department of Defense obligated the Services to conceive weapon systems with logistics in mind, emphasizing the cost of the system over its entire life, not just the cost of an item at the end of the production phase. This concept of integrated logistics support was, of course, not new even in 1964; it represented the continuation of the long-standing interplay between the research and development process, and the logistics dimension.

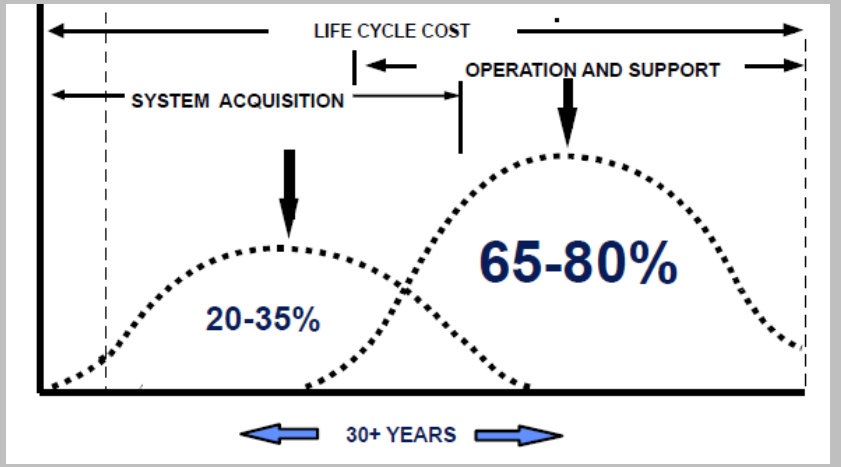
"…(The) most vital function was seeing that logistics, including supportability and costs, throughout the life of the system were considered whenever decisions were made about the form of the system. It generally was far less difficult, costly, and time consuming to make design changes before a weapon system entered production than to make modifications in the completed system."

Source: HQ Air Force Logistics Command (AFLC) (now Air Force Materiel Command) Office of History, 1981

Problem Statement

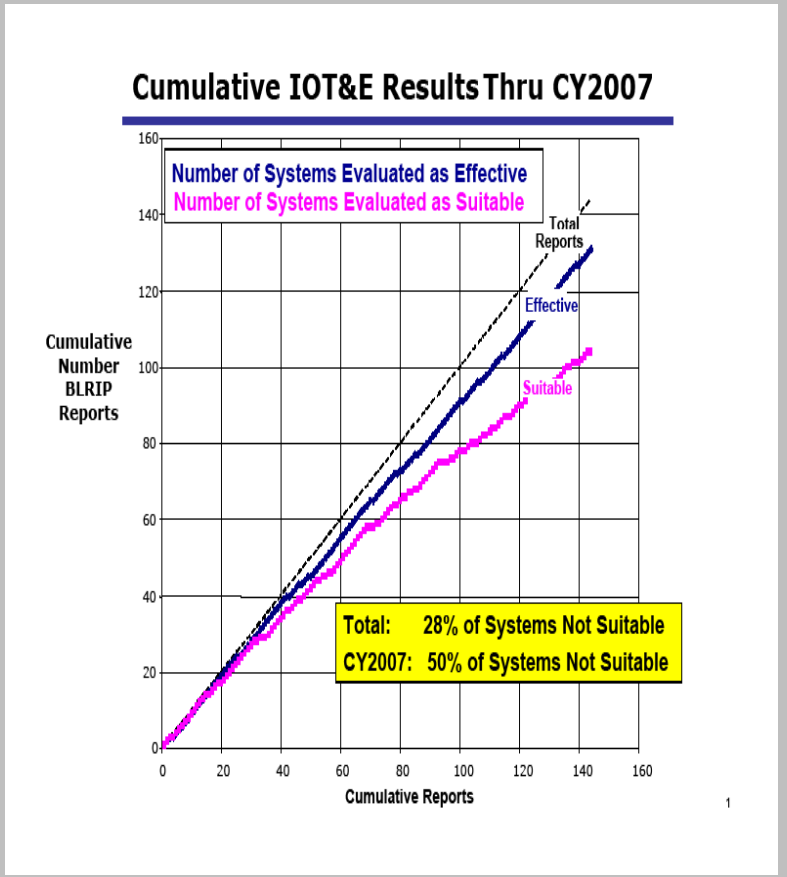
- RAM driven costs are the greatest contributor to Life Cycle Cost
- 70% of design-related costs are locked in place by Milestone B
- Service Life continues to increase
- Significant ROI on “early” Reliability/Maintainability Investment

- How do Program Management,
- Engineering, Test & Evaluation
- and Product Support work
- collaboratively to address
- these problems?



Problem Statement

- "..80% of the "Not Suitable" systems failed due to reliability.
- " ..failed System suitability – especially reliability –
- directly impacts our warfighter's performance drives system life cycle costs. Put simply, poor reliability means higher sustainment cost."
- "..a clear linkage between investment to improve reliability and reduced life cycle costs. Average expected reliability ROI is 15 to 1.'
- "..earlier reliability investment (ideally, early in the design process), could yield even larger returns with benefits to both warfighters and taxpayers.
- "..steps to improve suitability: the statement of requirements, contract provisions, early discovery of failure modes in developmental and operational test (DT/OT), and the collection of field data."



Policy: 5000.01/E.1.1.29 Total Systems Approach

- The PM shall be the single point of accountability for accomplishing program objectives for total life-cycle systems management, including **sustainment**.
- The PM shall apply human systems integration to optimize total system performance (hardware, software, and human), operational effectiveness, and **suitability**, survivability, safety, and affordability.
- PMs shall consider **supportability**, life cycle costs, performance, and schedule comparable in making program decisions. Planning for Operation and Support and the estimation of total ownership costs shall begin as early as possible. **Supportability, a key component of performance, shall be considered throughout the system life cycle**.

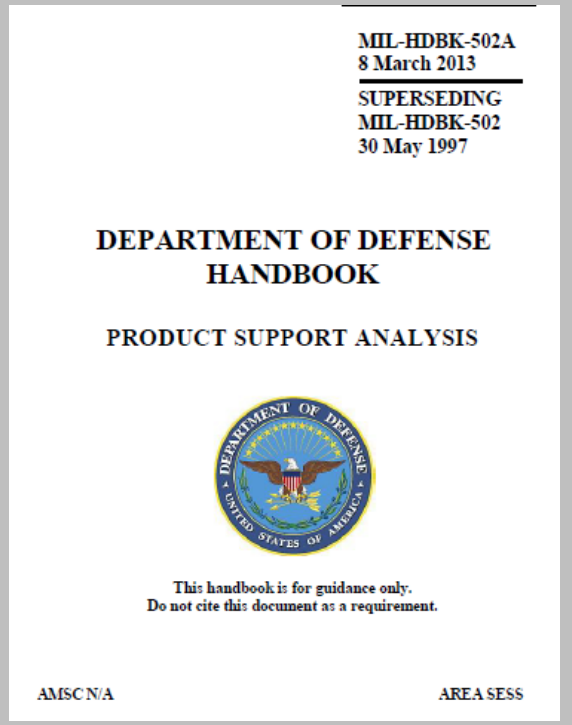
MIL-HDBK-502A Product Support Analysis

Product Support Analysis (PSA)

- The analysis required to create a product support strategy needed to field and maintain the readiness and operational capability of major weapon systems, subsystems, and components, including all functions related to weapon system readiness.
- Processes and Analyses are defined in SAE TA-STD-0017 Product Support Analysis (PSA)

Logistics Product Data (LPD)

- The data resulting from Product Support Analyses, consisting of detailed data pertaining to the identification of Product Support resource requirements of a product.
- Data elements are defined in SAE GEIA-STD-0007 Logistics Product Data (LPD)


MIL-HDBK-502A
8 March 2013

SUPERSEDING
MIL-HDBK-502
30 May 1997

DEPARTMENT OF DEFENSE
HANDBOOK

PRODUCT SUPPORT ANALYSIS

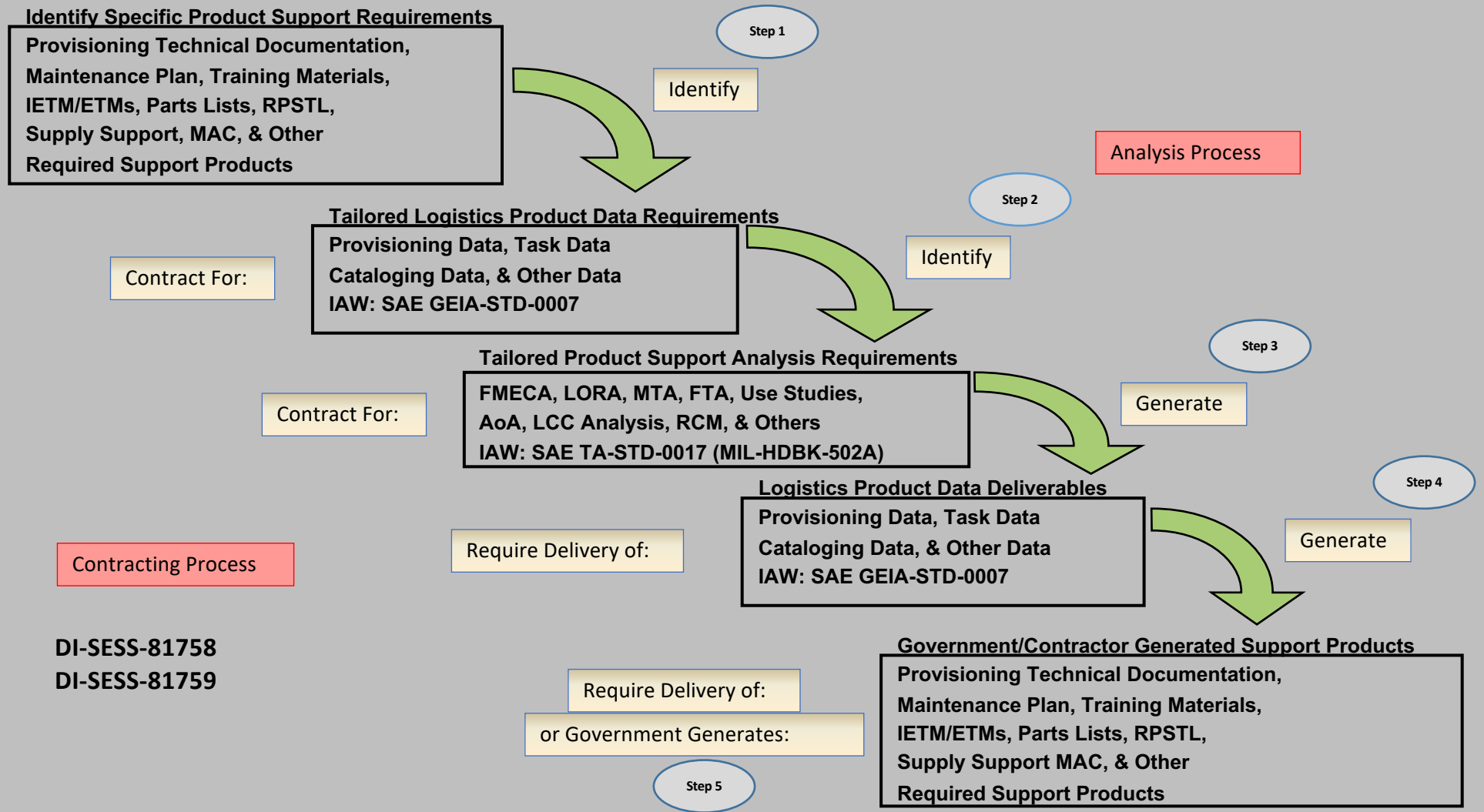
This handbook is for guidance only.
Do not cite this document as a requirement.

AMSC N/A AREA SESS

Why Do We Need PSA or LPD?

- Why do we need to do PSA?
- Why do we need Logistics Product Data LPD?
- When do we need to do PSA to get LPD?
- Do we understand how to contract for PSA/LPD?
- What resources/tools are available to help?

The PSA & LPD Process



Resources Available

DAU Courses

- LOG, ACQ, ENG, PMT … (see backup charts)

DAU On-line Workflow Learning

- DAU APP, Acquipedia, Blogs, Roadmap, etc... (backup)

Life Cycle Logistics Tools

- PowerLOG, COMPASS, SYSPARS, etc…

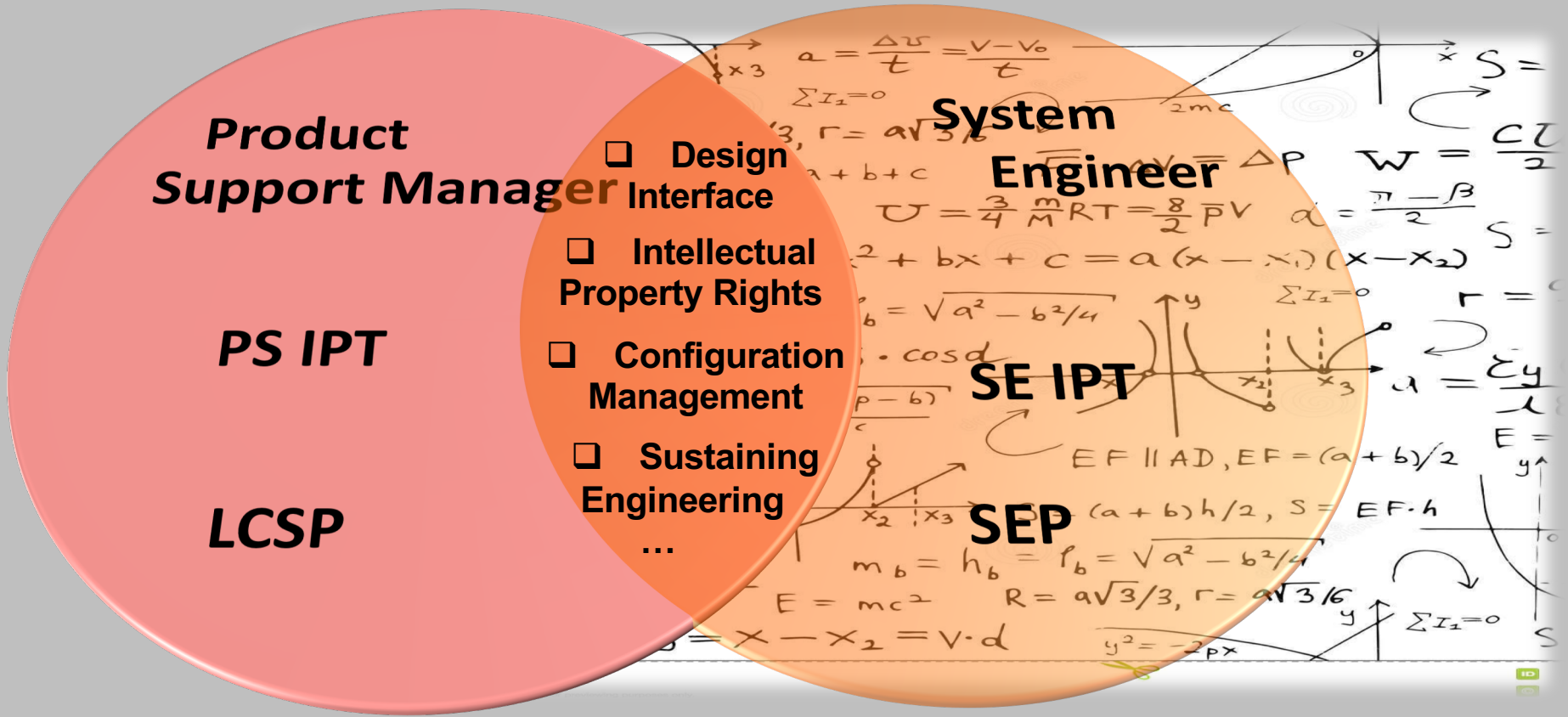
DAU Mission Assistance

- Teaming with DAU and other partners…

QUESTIONS?

Backup Slides

Product Support Technical Partners



Life Cycle Logistics DAWIA Certification Requirements (FY19)

Level I Certification

ACQ 101
Fundamentals of Systems Acquisition Management
25 hrs, online

ENG 101
Fundamentals of Systems Engineering
35 hrs, online

LOG 100
Life Cycle Logistics Fundamentals
27 hrs, online

LOG 102
Fundamentals of System Sustainment Management
25 hrs, online

LOG 103
Reliability, Availability and Maintainability (RAM)
22 hrs, online

CLL 008
Designing for Supportability in DoD Systems

CLL 011
Performance Based Life Cycle Product Support (PBL)

Knowledge based

1 Year Experience

Level II Certification

ACQ 202
Intermediate Systems Acquisition, Part A
35 hrs, online

ACQ 203
Intermediate Systems Acquisition, Part B
4.5 days, classroom

LOG 200
Product Support Strategy Development, Part A
22 hrs, online

LOG 201
Product Support Strategy Development, Part B
4.5 days, classroom

LOG 206
Intermediate Systems Sustainment Management
27 hrs, online

LOG 235
Performance-Based Logistics
16 hrs, online

CLL 001
Life Cycle Mgt & Sustainment Metrics

CLE 068
Intellectual Property & Data Rights

CLC 011
Contracting for the Rest of Us

CLL 012
Supportability Analysis

Choice of:
- EVM 101 Earned Value Mgt OR
- RQM 110 – Requirements Mgt OR
- CON 121/124/127 Contract Planning, Execution and Mgt OR
- LOG 204 – Configuration Mgt OR
- LOG 215 Technical Data Mgt

15-35 hrs, online

Application/case based

2 Years Experience

Level III Certification

LOG 340
Life Cycle Product Support
4.5 days, classroom

LOG 350
Enterprise Life Cycle Logistics Management
9.5 days, classroom

CLL 005
Developing a Life Cycle Sustainment Plan (LCSP)

CLL 015
Product Support Business Case Analysis (BCA)

CLL 020
Independent Logistics Assessments

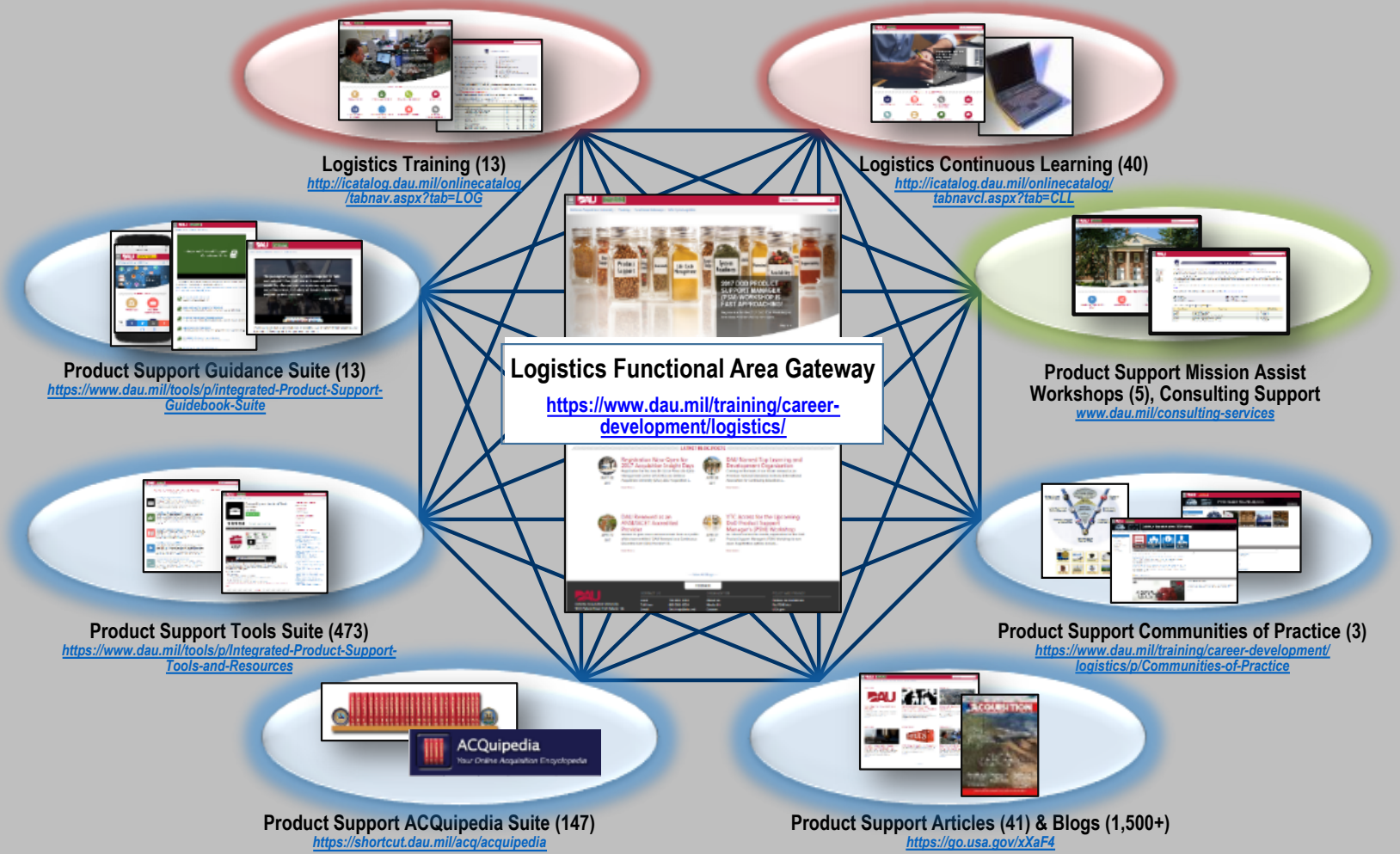
Choice of:
- LOG 211 – Supportability Analysis OR
- BCF 216 – O&S Cost Analysis OR
- ACQ 265 – Services Acquisition OR
- ACQ 315 – Understanding Industry (Business Acumen)

4.0-4.5 days, classroom

Case/scenario based

4 Years Experience

Integrated Suite of Product Support Focused Learning Assets & Related Resources



Nearly 90 Interdisciplinary Product Support- Focused Continuous Learning Modules

Product Support Statutory Framework

Title 10 U.S.C. §2320
"Rights in Technical Data"

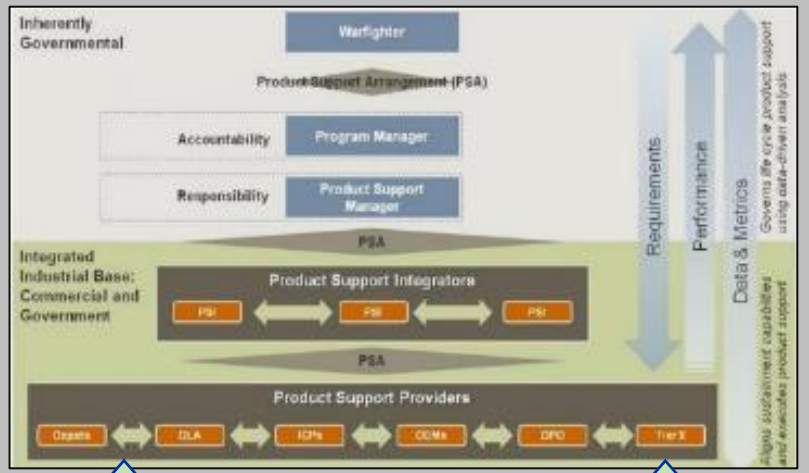
Title 10 U.S.C. §2208
"Working Capital Funds"

Title 10 U.S.C. §2337
"Life Cycle Mgmt & Product Support"

Title 10 U.S.C. §2337a
"Operating & Support Costs & ILAs"

Title 10 U.S.C. §2441
"Sustainment Reviews"

Title 10 U.S.C. §2366 a+b
"Milestones A & B Approval Certifications"



Title 10 U.S.C. §2443
"Sustainment Factors in Weapon System Design"

Title 10 U.S.C. §2474
"Public-Priv… Partnership…

Title 10 U.S.C. §2464
"Core Logistics Capabilities"

Title 10 U.S.C. §2466
"50-50 Rule"

Title 10 U.S.C. §2460
"Depot Maintenance"

Title 10 U.S.C. §2469
"$3M Rule"

Title 10 U.S.C. §2563
"Industrial Facilities' Sales to Persons Outside of DoD"

Title 10 U.S.C. §2437
"Replaced System Sustainment"

How is the Value of Better Performance Determined?

- Establishing Affordable Requirements/Metrics (KPP/KSAs)
- Decomposing Sustainment KPPs/KSAs into Affordable “Design-To” Requirements
- Impacting the design to achieve Affordable System Operational Effectiveness (ASOE) (Design Interface)
- Developing the Product Support Package requirements and resources (Maintenance Planning and Management)
- Ensuring capabilities are updated throughout the Life Cycle (Sustaining Engineering)